Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application. No new matter has been entered.

1. (Currently Amended) An optimizing planermill system comprising:

a) a control system;

b) a workpiece feed path for feeding an array of workpieces ~~linearly~~ downstream to an optimizing planer, wherein the optimizing planer comprises at least one of movable cutting elements and movable guiding elements;

c) means, operably coupled to the workpiece feed path, for setting the size of gaps between successive workpieces in the array of workpieces being ~~translated linearly~~ fed into the planer, [[so]]such that each gap ~~between successive workpieces in the array of workpieces~~ provides enough time for relative movement of the at least one of the movable cutting elements in the planer and the movable guiding elements ~~so as to obtain relative movement between the cutting elements and the workpiece being next fed in~~ so as to obtain optimized positioning corresponding to the workpiece being next fed into the planer;

d) the optimizing planer ~~downstream along the workpiece feed path~~ operably coupled to the control system, and further ~~the optimizing planer~~ having an entrance, for receipt of a rough workpiece, and an exit, for discharge of an at least partially finished workpiece;

e) a workpiece interrogator situated along the workpiece feed path upstream of the optimizing planer entrance and operably coupled to the control system so as to provide the control system with workpiece property information for each workpiece entering the optimizing planer;

wherein the control system provides the optimizing planer with control

information based upon the workpiece property information for each workpiece; and

wherein the optimizing planer moves at least one of the movable guiding elements and the movable cutting elements as the workpiece passes through the optimizing planer according to the control information for each workpiece.

2. (Currently Amended) The ~~apparatus~~ system of claim 1 wherein said each gap is optimized individually so that said enough time for relative movement ~~between the cutting elements and the workpiece~~ of at least one of the movable cutting elements in the planer and the movable guiding elements is only enough time for the individual optimization of the next successive workpiece in the array of workpieces.

3. (Currently Amended) The ~~apparatus~~ system of claim 1 wherein said means for setting the size of gaps includes means for accelerating ~~workpiece speed of~~ the workpiece along, and cooperating with, said workpiece feed path so as to control said size of gaps.

4. (Currently Amended) The ~~apparatus~~ system of claim 3 wherein said workpiece feed path includes workpiece transportation means for transporting the workpiece downstream from said means for accelerating the workpiece ~~speed~~[[,]] ~~downstream~~ to the planer.

5. (Currently Amended) The ~~apparatus~~ system of claim 4 ~~further comprising the planer, and~~ further comprising:

a) workpiece interrogation means for interrogating the workpiece to determine workpiece data corresponding to attributes of the workpiece[[,]]; and

b) ~~and~~ a workpiece optimization system that receives ~~the~~ workpiece data corresponding to attributes of the workpiece from said workpiece interrogation

means, determines an optimized cutting solution for the workpiece, and sends control instructions to said means for accelerating the workpiece ~~speed~~.

6. (Currently Amended) The ~~apparatus~~ system of claim 3 wherein said means for accelerating the workpiece ~~speed~~ includes one or more of a fixed speed transverse acceleration device, a variable speed transverse acceleration device, a vertical acceleration device, a fixed speed linear acceleration device, and a variable speed linear acceleration device.

7. (Currently Amended) The ~~apparatus~~ system of claim 5 wherein said workpiece interrogation means includes one or more of a linear workpiece interrogator and a transverse workpiece interrogator.

8. (Currently Amended) The ~~apparatus~~ system of claim 4 wherein said workpiece transportation means includes one or more of a fixed speed intermediate transport device, and a variable speed intermediate transport device.

9. (Currently Amended) The ~~apparatus~~ system of claim 3 wherein said workpiece feed path means includes one or more of a sheet feeder, a fixed speed lug transfer and a variable speed lug transfer.

10. (Currently Amended) The ~~apparatus~~ system of claim 1 further comprising a trimmer, wherein said size of gaps includes wood to be trimmed downstream in [[a]] the trimmer according to an optimized trim solution.

11. (Currently Amended) The ~~apparatus~~ system of claim 1 further comprising:

a) workpiece sensing means to sense one or more of the position, velocity and acceleration of a workpiece in the array of workpieces upstream of the planer; and

b) means for the control system to receive data from said workpiece sensing means and using said data from said workpiece sensing means, to

control said size of gaps to establish, control and/or to correct a minimum required gap between each successive workpiece of the array of workpieces.

12. (Currently Amended) The ~~apparatus~~ system of claim 5 wherein said control system and said workpiece optimization system are combined into a singular gap optimization system.

13. (Currently Amended) The ~~apparatus~~ system of claim 1 further comprising means for determining in-piece gap-reduction for a successive series of workpieces in the array of workpieces wherein said means for setting the size of gaps between successive workpieces cooperates with said means for determining in-piece gap-reduction so as to reduce said size of gaps where an optimized planning solution for a downstream workpiece in said successive series of workpieces provides for in-piece setting of the cutting elements within said downstream workpiece so as to pre-position the cutting elements for commencing an optimized planing solution for a next adjacent upstream workpiece in said successive series of workpieces, whereby said size of gap between said downstream and upstream workpieces is a reduced size of gap.

14. (Currently Amended) The ~~apparatus~~ system of claim 13 wherein said reduced size of gap is reduced to substantially zero gap.

15.-17. (Canceled)

18. (New) The system of claim 10, wherein the trimmer is contained within the optimizing planer.

19. (New) An optimizing planermill system comprising:

a) a workpiece feedpath, operatively coupled to an optimizing planer, for feeding an array of workpieces downstream to the optimizing planer;

b) an optimizing planer comprising at least one of movable cutting elements and movable guiding elements;

c) an interrogator that senses physical properties of each individual rough workpiece and collects data about one or more of the rough workpiece's physical properties;

d) one or more workpiece sensors that sense one or more of the position, velocity and acceleration of a workpiece in the array of workpieces;

e) an optimizer that receives data collected by the interrogator and determines an optimized planing solution for each individual workpiece;

f) one or more workpiece acceleration devices, operatively coupled to the workpiece feedpath, for adjusting the speed of a workpiece in the array of workpieces; and

g) a control system that receives input from the optimizer and the one or more workpiece sensors,

wherein the control system controls the at least one of movable cutting elements and movable guiding elements elements of the optimizing planer, and

wherein the control system further controls the one or more workpiece acceleration devices to establish, control and/or correct a minimum required gap between workpieces feeding into the optimizing planer.

20. (New) The system of claim 19, wherein the minimum required gap between workpieces is set to provide enough time for relative movement of at least one of the movable cutting elements and the movable guiding elements in the planer, so as to obtain optimized positioning corresponding to the workpiece being next fed into the planer.

21. (New) The system of claim 19, wherein the minimum required gap between workpieces is set individually so that said enough time for relative movement of at least one of the movable cutting elements and the movable guiding elements in the planer is

only enough time for the individual optimization of the next successive workpiece in the array of workpieces.

22. (New) The system of claim 18 further comprising a trimmer, wherein said minimum required gap includes wood to be trimmed downstream in the trimmer according to an optimized trim solution.

23. (New) The system of claim 18, wherein the trimmer is contained within the optimizing planer.